

Abstract

The present invention provides a novel surface engineering strategy that uses biomolecular interactions to immobilize surface modifying ligands on biomaterial architectures. The surface modified compositions resulting from the inventive method are useful in many contexts, including, but not limited to, scaffolds for tissue engineering and as vehicles for site specific drug delivery. In one preferred embodiment, the biomolecular interaction is achieved by using an “anchor-adapter-tag” system, in which an adapter which can interact specifically and with high selectivity with an anchor molecule (present on the biodegradable surface) and a tag (bound to the ligand to be immobilized) simultaneously is used in attaching the ligand to the surface in a manner which is stable in vitro or in vivo. In another preferred embodiment, the biomolecular interaction is achieved by using an “anchor-tag” system, in which the anchor simultaneously acts to effect attachment to the architecture and mediate direct interaction with the tag.

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